

Claims

What is claimed:

- 1 1. A method for controlling the flow of data in a base transceiver station comprising:
 - 2 a) providing first and second upstream devices;
 - 3 b) providing a downstream device; and
 - 4 c) enabling simultaneous communication between the downstream device and
 - 5 the first and second upstream devices.

- 1 2. The method of claim 1 wherein the first and second upstream devices each
- 2 comprise a base transceiver station manager.

- 1 3. The method of claim 2 wherein the downstream device comprises multiple
- 2 independent downstream devices.

- 1 4. The method of claim 3 wherein each downstream device comprises a channel
- 2 module.

- 1 5. The method of claim 3 wherein the first and second base transceiver station
- 2 managers include redundancy capabilities.

1 6. The method of claim 4 wherein the channel module comprises a backplane
2 interface wherein the backplane interface is independently coupled to each base
3 transceiver station manager.

1 7. The method of claim 6 wherein the backplane interface transmits and receives data
2 to and from the first and second base transceiver station managers simultaneously via
3 independent data paths.

1 8. The method of claim 7 wherein the backplane interface comprises a clock
2 reference selection circuit and a data path multiplexor.

1 9. The method of claim 8 wherein the clock reference selection circuit is utilized to
2 immediately switch to the first or second base transceiver station manager upon detection
3 of a failure of the first or second base transceiver station manager.

1 10. The method of claim 8 wherein the backplane interface further comprises a data
2 path de-multiplexor.

1 11. The method of claim 7 wherein the data comprises a data frame structure.

1 12. The method of claim 11 wherein the data frame structure comprises a frame sync
2 portion, a provisioning information portion, a control portion and a payload portion.

1 13. The method of claim 12 wherein the data frame structure is in a table format.

1 14. The method of claim 13 wherein the table format comprises seven columns and ten
2 rows.

1 15. A wireless communication system comprising:
2 at least one subscriber unit; and
3 at least one base transceiver station, the base transceiver station transmitting and
4 receiving signals to and from the at least one subscriber unit, the at least one base
5 transceiver station comprising:
6 a first upstream device;
7 a second upstream device coupled to the first upstream device; and
8 a downstream device coupled to the first and second upstream devices wherein the
9 downstream device comprises means for enabling simultaneous communication between
10 the downstream device and the first and second upstream devices.

1 16. The system of claim 15 wherein the first and second upstream devices each
2 comprise a base transceiver station manager.

1 17. The system of claim 16 wherein the downstream device comprises multiple
2 independent downstream devices.

1 18. The system of claim 17 wherein each downstream device comprises a channel
2 module.

1 19. The system of claim 18 wherein the first and second base transceiver station
2 manager include redundancy capabilities.

1 20. The system of claim 18 wherein the channel module comprises a backplane
2 interface wherein the backplane interface is independently coupled to each base
3 transceiver station manager.

1 21. The system of claim 20 wherein the backplane interface comprises means for
2 transmitting and receiving data to and from the first and second base transceiver station
3 managers simultaneously via independent data paths.

1 22. The system of claim 21 wherein the means for receiving data is coupled to a clock
2 reference selection circuit and a data path multiplexor.

1 23. The system of claim 22 wherein the clock reference selection circuit is utilized to
2 immediately switch to the first or second base transceiver station manager upon detection
3 of a failure of the first or second base transceiver station manager.

1 24. The system of claim 22 wherein the means for transmitting data is coupled to a
2 data path de-multiplexor.

1 25. The system of claim 21 wherein the data comprises a data frame structure.

1 26. The system of claim 25 wherein the data frame structure comprises a frame sync
2 portion, a provisioning information portion, a control portion and a payload portion.

1 27. The system of claim 26 wherein the data frame structure is in a table format.

1 28. The system of claim 27 wherein the table format comprises seven columns and ten
2 rows.

1 29. A base transceiver station for use in a wireless communication system including:
2 a first upstream device;
3 a second upstream device coupled to the first upstream device; and

4 a downstream device coupled to the first and second upstream devices wherein the
5 downstream device comprises means for enabling simultaneous communication between
6 the downstream device and the first and second upstream devices.

1 30. The base transceiver station of claim 29 wherein the first and second upstream
2 devices each comprise a base transceiver station manager.

1 31. The base transceiver station of claim 30 wherein the downstream device comprises
2 multiple independent downstream devices.

1 32. The base transceiver station of claim 31 wherein each downstream device
2 comprises a channel module.

1 33. The base transceiver station of claim 32 wherein the first and second base
2 transceiver station manager include redundancy capabilities.

1 34. The base transceiver station of claim 32 wherein the channel module comprises a
2 backplane interface wherein the backplane interface is independently coupled to each base
3 transceiver station manager.

1 35. The base transceiver station of claim 34 wherein the backplane interface comprises
2 means for transmitting and receiving data to and from the first and second base transceiver
3 station managers simultaneously via independent data paths.

1 36. The base transceiver station of claim 35 wherein the means for receiving data is
2 coupled to a clock reference selection circuit and a data path multiplexor.

1 37. The base transceiver station of claim 36 wherein the clock reference selection
2 circuit is utilized to immediately switch to the first or second base transceiver station
3 manager upon detection of a failure of the first or second base transceiver station manager.

1 38. The base transceiver station of claim 36 wherein the means for transmitting data is
2 coupled to a data path de-multiplexor.

1 39. The base transceiver station of claim 34 wherein the data comprises a data frame
2 structure.

1 40. The base transceiver station of claim 39 wherein the data frame structure
2 comprises a frame sync portion, a provisioning information portion, a control portion and
3 a payload portion.

1 41. The base transceiver station of claim 40 wherein the data frame structure is in a
2 table format.

1 42. The base transceiver station of claim 41 wherein the table format comprises seven
2 columns and ten rows.

1 43. A data frame structure for use in a wireless communication system, the wireless
2 communication system including a first upstream device, a second upstream device and a
3 downstream device, the data frame structure comprising:
4 a frame sync portion;
5 a provisioning information portion;
6 a control portion; and
7 a payload portion wherein the data frame structure facilitates a simultaneous bi-
8 directional flow of data between the downstream device and the first and second upstream
9 devices.

1 44. The data frame structure of claim 43 wherein the data frame structure is in a table
2 format.

1 45. The data frame structure of claim 44 wherein the table format comprises seven
2 columns and ten rows.